REMARKS

This is intend d as a full and complete response to the Final Office Action dated November 29, 2001, having a shortened statutory period for response set to expire on February 29, 2002. Claims 1-8, 10-13, and 15-27 are pending in the application. Claims 23-27 were withdrawn from consideration by the Examiner. Claims 1-8, 10-13, and 15-22 were considered and stand rejected by the Examiner. Applicants propose canceling the restricted claims 23-27 without prejudice. Applicants have amended claims 1 and 15 to correct matters of form and Applicants believe that no new matter has been introduced in this response.

Claims 1-8, 10-13, and 15-22 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over the combination of *Endo et al.* (U.S. Patent No. 4,532,150), hereinafter, *Endo et al.*, and *Loboda et al.* (EP 0725440), hereinafter Europe '440. The Examiner asserts that it would have been within the scope of one of ordinary skill in the art to combine the teachings of *Endo et al.* '150 and Europe '440 to enable the formation of the SiC layers of Europe '440. Applicants respectively traverse this rejection.

Endo et al. '150 discloses a process for depositing silicon carbide on a substrate. The substrate may be metallic, such as aluminum material. Europe '440 discloses depositing a silicon carbon barrier layer on a metal surface, between two metal layers to prevent interlayer diffusion, or between a metal and a dielectric material to prevent diffusion of the metal into the dielectric material.

Endo et al. '150 and Europe '440, either alone or in combination, do not teach, show, or suggest depositing a silicon carbide barrier layer on the substrate by a method comprising introducing an alkylsilane and a noble gas into a chamber, initiating a plasma in the chamber, and reacting the alkylsilane in the presence of the plasma to form silicon carbide, depositing a metal barrier layer on the silicon carbide barrier layer, and depositing a metal layer over the metal barrier layer, as recited in claim 1, and claims dependent thereon.

Additionally, *Endo et al.* '150 and Europe '440, either alone or in combination, do not teach, show, or suggest depositing a silicon carbide etch stop having an etch selectivity ratio of at least about 40 to 1 on a first dielectric layer by a method

comprising introducing an alkylsilane and a noble gas into a chamber, initiating a plasma in the chamber, and reacting the alkylsilane in the presence of the plasma to form silicon carbide, patterning the silicon carbide etch stop, depositing a second dielectric layer on the silicon carbide etch stop, etching the first dielectric layer and the second dielectric layer to form a feature definition, depositing a tantalum nitride barrier layer in the feature definition, depositing a copper layer over the tantalum nitride layer to fill the feature definition, and depositing a silicon carbide passivation layer on the copper layer, as recited in claim 15, and claims dependent thereon.

Therefore, *Endo et al.* '150 and Europe '440, either alone or in combination, do not teach, show, or suggest the claimed aspects of the invention. Withdrawal of the rejection is respectfully requested.

The prior art made of record is noted. However, it is believed that the secondary references are no more pertinent to the Applicants' disclosure than the primary references cited in the office action. Therefore, it is believed that a detailed discussion of the secondary references is not deemed necessary for a full and complete response to this office action. Accordingly, allowance of the claims is respectfully requested.

In conclusion, the references cited by the Examiner, neither alone, nor in combination, teach, show, or suggest the claimed aspects of the invention. Having addressed all issues set out in the office action, Applicants respectfully submit that the claims are in condition for allowance and respectfully request that the claims be allowed.

Respectfully submitted,

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APPENDIX

1. (Twice Amended) A method for processing a substrate, comprising:

depositing a silicon carbide barrier layer on the substrate by a method comprising:

introducing an alkylsilane and a noble gas into a chamber;

initiating a plasma in the chamber; and

reacting the alkylsilane in the presence of the plasma to form silicon carbide; [and]

depositing a metal barrier layer on the silicon carbide barrier layer; and

depositing a metal layer over the metal barrier layer.

15. (Twice Amended) The method for processing a substrate, comprising:

depositing a silicon carbide barrier layer on the substrate by a method comprising:

introducing an alkylsilane and a noble gas into a chamber;

initiating a plasma in the chamber; and

reacting the alkylsilane in the presence of the plasma to form silicon carbide;

depositing a first dielectric layer on the silicon carbide layer;

depositing a silicon carbide etch stop having an etch selectivity ratio of at least about 40 to 1 on the first dielectric layer by a method comprising:

introducing an alkylsilane and a noble gas into a chamber;

initiating a plasma in the chamber; and

reacting the alkylsilane in the presence of the plasma to form silicon carbide;

patterning the silicon carbide etch stop;

depositing a second dielectric layer on the silicon carbide etch stop;

etching the first dielectric layer and the second dielectric layer to form a feature definition;

depositing a tantalum nitride barrier layer in the feature definition; [and]

depositing a copper layer over the tantalum nitride layer to fill the feature definition; and

depositing a silicon carbide passivation layer on the copper layer.